There are 6 references: 3 Soviet and 3 English.

Glazkov, A. A. The Amplitude of the Fundamental Wave (TM) in a Diaphragm-type Waveguide 32

The author generalizes the procedure for calculating the amplitude of the accelerating wave in a linear electron accelerator, depending on geometrical parameters and operating conditions of a waveguide. It is shown that the value of the fundamental wave decreases when higher-order modes are taken into account in calculations. The author also derives an expression for partial power of the accelerating harmonic. It is shown that partial power depends on the distribution of amplitudes of harmonics at the axis of the waveguide. The author also discusses methods of obtaining the function of amplitude distribution. He presents numerical results of the calculation of partial power, which may be used in practical application. He also describes possible methods of experimental study of higher harmonics in a waveguide. There are 15 references: 6 Soviet and 9 English.

Sobenin, N. P. Measurement of Variable Phase Velocity in a Waveguide of a Linear Accelerator by the Reflecting Plunger Method 49

The author describes the reflecting plunger method of measuring variable phase velocity in a diaphragm-type waveguide. He discusses possible error sources and evaluates the accuracy of determining phase velocity. He also presents results of experimental studies of reflecting plungers and suggests optimum sizes of plungers. There are 4 references, all English.

Sobenin, N. P. Determination of the Waveguide Diameter of a Linear Accelerator 54

The author presents experimental and theoretical data for calculating the diameter of a diaphragm-type waveguide with variable phase velocity. He also presents parametric curves for determining the diameter of a waveguide in a wide range of variation of the phase velocity, operating wavelength, and size of the diaphragm aperture. The curves are valid for diaphragm-type waveguides excited by $\pi/2$-type waves and having a diaphragm thickness of 4 mm. There are 9 references: 1 Soviet and 8 English.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010018-6"

Shal'nov, A. V., and S. P. Lomnev. Preliminary Bunching of Electrons in a Linear Accelerator by Means of a Klystron Resonator 64

The authors study the axial motion of particles in a waveguide resonator of a linear electron accelerator with a klystron preresonator. Methods of analyzing electron bunching are also presented. The authors suggest plotting the output characteristics of a waveguide resonator as a function of output parameters (terminal energy and phase) and the phase of the high-frequency field of a particle entering the klystron resonator. They also present two numerical examples illustrating the advantageous effect of preliminary bunching by means of a klystron. The authors also discuss the injection characteristics of two types of resonators and present the phase-energy characteristics of a klystron resonator. There are 8 references: 5 Soviet, 2 English, and 1 French.

Glazkov, A. A., and Ye. G. Pyatnov. Problems of Improving the Energy Spectrum of Electrons at the Output of a Linear Accelerator by Shifting the Phase 180°. 79

The authors present a theoretical study of a method of shifting the phase 180° as a means of reducing energy scattering at the output of a

Linear Accelerators; (Cont.) SOV/2003

linear electron accelerator. The method was suggested by O. A. Val'dner. It is shown that the use of this method for accelerators of over 3-5 Mev may by three times the nonuniformity of energy of the output beam. The authors discuss ways of applying this method practically and show that by using this method the longitudinal stability of particles is not disturbed. There are 6 references: 3 Soviet and 3 English.

Tragov, A. G. Phase Shifter With Two Dielectric Plates 91

The author discusses a phase shifter in which phase shifting is accomplished by moving two dielectric plates in the cross-section of a rectangular waveguide. It is shown that the use of two plates instead of one makes it possible to increase the phase shift and decrease the size of the phase shifter by one and a half times. Results of theoretical and experimental calculations are presented. There are 2 references, both Soviet.

AVAILABLE: Library of Congress

Card 6/6

JP/lsb
8-31-59

25816
S/142/60/003/006/006/016
E032/E114

24.6731

AUTHORS: Shal'nov, A.V., and Glazkov, A.A.

TITLE: Some problems in the design of linear electron accelerators

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1960, Vol.3, No.6, pp. 598-604

TEXT: A description is given of simplified methods for the analysis of the relation between the electron energy and the phase velocity on the one hand and the supply frequency on the other, when there are small departures from the nominal value of the frequency. The exact analysis of linear electron accelerations is very complicated and is based on the numerical integration of the equation of motion with varying frequency (A.V. Shal'nov, Ye.G. Pyatnov and A.A. Glazkov. Sb. tr. MIFI. "Lineynyye uskoriteli", Moscow, 1959, Ref.1). The present methods are not exact but they are convenient for practical purposes. The first method is based on the assumption that at the end of the accelerator the electron velocity is equal to the phase velocity of the wave. This method is applied to accelerators with X

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adiabatic (slow) increase in the phase velocity along the waveguide. The second method is convenient with electron linear accelerators in which the phase velocity increases very rapidly over a small initial part of the waveguide. In this method use is made of the relation between the change in the particle energy and the phase shift at the end of the accelerator. Formulae are derived which can be used to obtain a rapid and relatively accurate estimate of the frequency properties of linear accelerators.
The second part of the paper is concerned with approximate expressions for the group velocity of the wave. A derivation is given of a set of equations for the group velocity as a function of the geometry of the waveguide and the working parameters. This formula is said to be more accurate and more general than those given by V. Vladimirskiy (Ref.5: DAN SSSR, 1946, V.52 3, 219) and E. Chu and W. Hansen (Ref.6: The Theory of Disc - Loaded Wave Guides. J. App. Phys., 1948, V.18, No.11, 996).
There are 1 figure and 7 references: 2 Soviet and 5 non-Soviet. The four most recent English language references read as follows:
Ref.2: R. Shersby, Harvie - Travelling wave Linear Electron Accelerator. Proc. Phys. Soc., 1948, V.61, Pt.III, No.345, p.255.

25810

Some problems in the design of S/142/60/003/006/006/016
E032/E114

Ref.4: C. Grosjean V. Vanhuyse, "Experimental Verification of a Frequency Equation for Corrugated Wave Guides" II, Nuovo Cimento, 1955, Vol.1, No.1, 193.

Ref.6: as quoted in the text above.

Ref.7: W. Walkinshaw, "Theoretical Design of a Linear Accelerator for Electrons" Proc. Phys. Soc., 1948, V.61, Pt. III, No.345, 246.

ASSOCIATION: Kafedra elektrotekhniki Moskovskogo inzhenerno-fizicheskogo instituta
(Department of Electrical Engineering Moscow Engineering and Physics Institute)

SUBMITTED: Initially July 24, 1959, and after revision January 6, 1960.

X

Card 3/3

SHAL'NOV, A.V.; GLAZKOV, A.A.

Problems concerning the calculation of linear electron accelerating devices. Izv. vys. ucheb. zav.; radiotekh. 3 no.6: 598-604 N-D '61. (MIRA 14:8)

1. Rekomendovana kafedroy elektrotekhniki Moskovskogo inzhenernofizicheskogo instituta.
(Wave guides) (Particle accelerators)

VAL'DNER, O.A.; GLAZKOV, A.A.

Linear electron accelerator to 3 Mev energy. Prib.i tekh.eksp. 6 no.5:26-28 S-O '61. (MIRA 14:10)

1. Moskovskiy inzhenerno-fizicheskiy institut.
(Particle accelerators)

GLAZKOV, A. A.

95

S/089/62/013/006/019/027
B102/B186

AUTHORS: G. T. and M. R.

TITLE: Nauchnaya konferentsiya Moskovskogo inzhenerno-fizicheskogo instituta (Scientific Conference of the Moscow Engineering Physics Institute) 1962

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 603 - 606

TEXT: The annual conference took place in May 1962 with more than 400 delegates participating. A review is given of these lectures that are assumed to be of interest for the readers of Atomnaya energiya. They are following: A. I. Leypunskiy, future of fast reactors; A. A. Vasil'yev, design of accelerators for superhigh energies; I. Ya. Pomeranchuk, analyticity, unitarity, and asymptotic behavior of strong interactions at high energies; A. B. Migdal, phenomenological theory for the many-body problem; Yu. D. Fiveyskiy, deceleration of medium-energy antiprotons in matter; Yu. M. Kogan, Ya. A. Iosilevskiy, theory of the Mössbauer effect; M. I. Ryazanov, theory of ionization losses in nonhomogeneous medium; Yu. B. Ivanov, A. A. Rukhadze, h-f conductivity of subcritical plasma;

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S/089/62/013/006/019/027
Nauchnaya konferentsiya... B102/B186

design of 30-Mev electron linear accelerator; Ye. G. Pyatnov, A. A. Glazkov, V. G. Lopato, A. I. Finogenov, G. N. Skepskiy, V. D. Seleznev, experimental characteristics of low-energy electron linear accelerators; G. A. Zeytlenk, V. M. Levin, S. I. Piskunov, V. L. Smirnov, V. K. Khokhlov, radiocircuit parameters of ЛУЭ (LUE)-type accelerators; G. A. Tyagunov, O. A. Val'dner, B. M. Gokhberg, S. I. Korshunov, V. I. Kotov, Ye. M. Moroz, accelerator classification and terminology; O. S. Milovanov, V. B. Varakein, P. R. Zenkevich, theoretical analysis of magnetron operation; A. G. Tragov, P. R. Zenkevich, calculation of attenuation in a diaphragmated waveguide; Yu. P. Lazarenko, A. V. Ryabtsev, optimum attenuation length for linear accelerator; A. A. Zhigarev, R. Ye. Yeliseyev, review on trajectographs; I. G. Morozova, G. A. Tyagunov, review on more than 500 ion sources; M. A. Abroyan, V. L. Komarov, duoplasmatron-type source; V. S. Kuznetsov, A. I. Solnyshkov, calculation and production of intense ion beams; V. M. Rybin (Ye. V. Armenskiy), inductive current transmitters of high sensitivity; V. I. Koroza, G. A. Tyagunov, kinetic description of linear acceleration of relativistic electrons; A. D. Vlasov, phase oscillations in linear accelerators; E. L. Burshteyn, G. V. Voskresenskiy, beam field effects in the waveguide of an electron linear accelerator; R. S. Bobovikov,

Card 3/4

L 10016-63 EPF(n)-2/BDS/EWT(1)/EWT(m)/ES(w)-2--AFFTC/ASD/SSD--Pu-4/
Pab-4--IJP(C)/AR
ACCESSION NR: AP3002715 S/0120/63/000/003/0029/0032

69

AUTHOR: Val'dner, O. A.; Glazkov, A. A.; Finogenov, A. I.

TITLE: Linear accelerator for 5-Mev energy (Model U-12)

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1963, 29-32

19

TOPIC TAGS: linear accelerator, Gamma radiation, electron accelerator

ABSTRACT: The performance of a linear electron accelerator recently developed at the Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering-Physics Institute) is described. This unit has a diaphragmed accelerating waveguide consisting of a first (buncher) section 122 cm in length, containing 54 segments of varying cross section, and a second section 78 cm in length containing 30 segments of constant cross section. Over the entire length the phase velocity rises from 0.436 to 1.00 and the voltage gradient from 17.4 to 26 kv/cm. The power source is an S-band magnetron of 1.5-megawatt peak power, working at 400 cps with pulses of 2.5 microsec. This yields a beam of 70-microamp average current and a 4--5 Mev energy, with an energy spectrum of approximately 5% and an average beam power of 300 watts. With optimum decelerating target, a Gamma radiation level of

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ACCESSION NR: AP3002715

600 r/min is attainable at a one-meter distance normal to the target. Accelerator characteristic curves are given as measured over the magnetron frequency range of 6.79--6.85 Mc. Tests show that accelerator efficiency, defined as the fraction of h-f pulse energy transferred to the beam, can attain 25%. To arrive at this the beam energy was determined from its absorption in aluminum foil layers. The main operation difficulties cited are in obtaining the optimum match of the waveguide to the magnetron and in getting axial symmetry of the magnetic focussing field in order to prevent beam losses in the guide. This model is an improvement over an earlier version in its maximum beam energy and radiation produced, as well as in construction and reliability. Several units are in current operation. Orig. art. has: 6 figures.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering-Physics Institute)

SUBMITTED: 12Jul62 DATE ACQ: 12Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 002 OTHER: 000

Card 2/2

S/089/63/014/002/017/019
B102/B186

AUTHORS: Val'dner, O. A., Glazkov, A. A.

TITLE: Development of commercial linear accelerators

PERIODICAL: Atomnaya energiya, v. 14, no. 2, 1963, 224-226

TEXT: The authors report on the design and construction work carried out at the Moskovskiy inzhenerno-fizicheskiy institut (Moscow Institute of Physical Engineering) which led to the series production of four types of electron linear accelerators: У-10 (U-10), У-12 (U-12), У-13 (U-13) and У-16 (U-16). U-10: Total electron energy 3 Mev, mean current 200 μa (can be raised to 600 μa), γ-ray intensity 200 r/min; waveguide length 122 cm (54 cells). The phase velocity of the β_v-wave lies between 0.436 and 0.987, the mean load parameter $a/\lambda = 0.16$, the amplitude of the E-field is 17.4-30.0 kv/cm. U-12: electron energy 5 Mev, mean current 100 μa, γ-ray intensity 600 r/min; waveguide length 200 cm (84 cells), the last 78 cm (30 cells) are equal. $\beta_v = 1.00$; $a/\lambda = 0.155$, E drops from 30 to 26 kv/cm. U-13: 10 Mev, 70 μa,

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Development of commercial ... S/089/61/011/006/017/013
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2500 r/min. The waveguide consists of two sections each 2[illegible] cm long; the first equals that of the T-12, the second one has constant structure. T-15 permits smooth variation of the electron energy from 5 to 10 Mev by means of modifying the phase shifter. T-16: 1-2 Mev, 200 μa; energy variation is possible with constant current. Waveguide length 100 cm (50 cells), a/λ drops linearly from 0.18 to 0.12, E increases from 9.9 to 34.3 kv/cm. The electron energy drops linearly from 2.1 to 1.3 Mev when the frequency rises from its nominal value to 8 Mc. The spectrum broadens from 7 to only 9.5% without current losses. These four types are to be produced in more than 15 variants, almost half of which has already been tested. There are 2 figures.

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ACCESSION NR: AT4019722 S/2759/63/000/005/0055/0064

AUTHOR: Glazkov, A. A.

TITLE: Power balance during acceleration in a linear accelerator (LEA)

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoritali (Accelerators), no. 5, 1963, 55-64

TOPIC TAGS: accelerator, linear acceleration, electron accelerator, linear electron accelerator, numerical integration, power beam

ABSTRACT: This paper gives a survey of the basic results in the linear theory of an LEA and also considers the application of this theory to the computation of the distribution of power among the power-consuming units of the LEA, in order to lay a foundation for a new method of measuring the power in the beam of accelerated electrons. Usually, in calculating the LEA power beam, use is made of numerical integration of the equations of motion of the particles. This method takes into account the phase oscillations of the [illegible] and gives the most precise results. However, it calls for a large amount of computation. In many cases, for rapid estimates we can restrict ourselves to a simple theory which neglects phase oscillations and which allows us to obtain the basic characteristics of the LEA in analytic form. The problem is solved under the following assumptions: 1) the ac-

ACCESSION NR: AT4019722

celerator waveguide has a cell-structure which is constant along the longitudinal axis; 2) all the electrons are bunched and are accelerated under an unvarying phase relative to the point with zero field voltage. Orig. art. has: 6 figures and 23 equations.

ASSOCIATION: [illegible]fizicheskiy institut, Moscow ([illegible] Institute)

SUBMITTED: 00 DATE ACQ: [illegible]64 [illegible]

SUB CODE: NP NO REF SOV: 00 OTHER: 003

Card 2/2

L 22488-65 EWT(1)/EEC(t) Peb IJP(c) BSD/SSD/AFWL/AEDC(a)/AFETR
ACCESSION NR: AT5001496 S/2759/64/000/006/0071/0090

AUTHOR: Glazkov, A. A.; Gryzlov, A. V.

TITLE: Separation of high-energy particles with the aid of a longitudinal electrical wave

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 6, 1964, 71-90

TOPIC TAGS: particle accelerator, pion, antiproton, k meson, diaphragmed waveguide, traveling wave accelerator, particle separator

ABSTRACT: The authors consider the feasibility of a separator using a diaphragmed waveguide with type E_{01} traveling wave. The initial momentum of the accelerated particle is assumed to be 5 BeV/c. The waveguide separator with longitudinal electric field imparts each particle a small momentum increment, which differs with the type of particle, after which the particles are separated in space by deflection in a static magnetic field. The geometry of the diaphragmed-waveguide cells is chosen such as to ensure synchronous motion of the E_{01} wave and of the particles (wave phase velocity equal to unity). Such a separator does not differ in principle from the well known linear traveling-wave accelerator. However

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ACCESSION NR: AT5001496

whereas in an accelerator the tendency is to attain maximum electron energy, in a separator the problem is to have at least one type of particles acquire a momentum increment (positive or negative) which is different to a maximum degree from those of the others. Separators consisting of one section and of two sections are considered and the momentum differences

SUBMITTED: 00 ENCL: 00 SUB CODE: NP, EC
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Card 2/2

L 23137-66 EWT(m)/T
ACC NR: AP6001566 (A) SOURCE CODE: UR/0120/65/000/006/0027/0037

49
47
B

AUTHOR: Val'dner, O. A.; Glazkov, A. A.

ORG: Moscow Engineering and Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut)

TITLE: Calculation of the dynamics of particles in waveguide-type separators

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1965, 27-37

TOPIC TAGS: particle separator, waveguide particle separator, particle motion, waveguide, particle beam, nuclear physics apparatus

ABSTRACT: The displacement and deviation of particles in a TW separator are calculated as functions of their rest energies on the basis of particle-motion equations. The principles of selection of wave phase velocity and other separator parameters for optimal isolation of certain particles from a single-impulse beam are discussed. The effects of nonmonochromaticity and divergence of the beam are allowed for. The design of the longitudinal separator, which uses standard TM mode, is simpler thanks to the great deal of experience accumulated in the development of linear electron accelerators. However, this separator requires either

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ACC NR: AP6001566

unwieldy static magnets or longer sections and higher SHF power than those needed for a lateral-type separator. Also, the longitudinal type is more sensitive to particle-pulse spread. The lateral type has a larger aperture, does not require additional magnets, but uses the HEM_{11} -mode whose properties are complex and little known. Separator-parameter tolerances are considered. Superhigh-impulse-particle separation is analyzed. The theory is illustrated by an example of isolating K-mesons and anti-protons, having momenta of 5 and 21 Gev/s, in a separator at a wavelength of 10 cm. Orig. art. has: 10 figures, 25 formulas, and 5 tables.

SUB CODE: 18, 09 / SUBM DATE: 28Nov64 / ORIG REF: 003

Card 2/2 PB

L 06536-67 EWT(m) IJP(c)

ACC NR: AT6017513 (N) SOURCE CODE: UR/2759/65/000/007/0092/0119

AUTHOR: Glazkov, A. A.; Gryzlov, A. V.

29

B+1

ORG: none

TITLE: Separation of high energy particles in a waveguide with transverse field

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 7, 1965, 92-119

TOPIC TAGS: high energy accelerator, 19 particle accelerator component, magnetic separation, waveguide diffraction

ABSTRACT: The authors present a detailed review of the design of waveguide separators (RF separators) for high energy particles. The computational methods are based mainly on published work performed at CERN, Stanford, Berkeley, and Brookhaven. As an example, the Stanford RF separator was cited with the following parameters: length--L = 6 m, field intensity--E_0 (hybrid wave) = 60 kv/cm, aperture--$2a$ = 40.64 mm, waveguide diameter--$2b$ = 117.894 mm, period--D = 35.0 mm, diaphragm thickness--t = 5.84 mm. Typical angular separations are graphed as functions of L and E_0. Orig. art. has: 14 figures, 43 formulas

SUB CODE: 20,18/ SUBM DATE: none/ ORIG REF: 002

Card 1/1 *2 gla*

ACC NR: AT6017514 (N) SOURCE CODE: UR/2759/65/000/007/0120/0141

AUTHOR: Glazkov, A. A.; Gryzlov, A. V.

ORG: none

TITLE: Improvement of the characteristics of a separator by sectionalizing the waveguide

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 7, 1965, 120-141

TOPIC TAGS: nuclear particle separation, waveguide, K meson, pi meson, antiproton

ABSTRACT: In this paper the theory is presented and the characteristics are set forth for the construction of a particle separator consisting of two sections of a waveguide. With the identical alignment of the field in the two sections of the waveguide and the conditions such that $L = 6$ meters, the power in each section equals 8 megawatts, amplitude of hybrid wave at entrance $E_0 = 42.3$ kv/cm, the initial particle pulse $P = 5$ Bev/sec and the deflection amplitude $x' = 5.08$ mrad, the separation of K and π-mesons can be achieved with an optimum distance between sections $l_{opt} = 12$ m. The dispersion of the hybrid wave HEM_{11} with given cell dimensions is inverted, i. e., the phase and group velocity direction are opposite. An optimum length of 0.36 meters is required for separation of antiprotons and π-mesons. The characteristics of the separator in

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L 06419-67 EWT(m)

ACC NR: AT6017515 (N) SOURCE CODE: UR/2759/65/000/007/0142/0166

AUTHOR: Glazkov, A. A.; Gryzlov, A. V.

ORG: none

TITLE: Effect of scatter in the initial conditions upon the separation of particles in a separator

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 7, 1965, 142-166

TOPIC TAGS: antiproton, pi meson, K meson, klystron, mu meson, nuclear particle separation

ABSTRACT: The effect of scatter in the initial conditions upon particle separation was studied for three separator models. Model 1 has a longitudinal field (TM_{01}), a section length of 7 meters with a separation 8 meters, modulation amplitude of field E_0 = 85 kv/cm. Model 2 has with a transverse field (HEM_{11}), section length 3 meters, maximum separation of 16 meters (can be adjusted), amplitude of deflecting field E_0 = 42.3 kv/cm. Model 3 is the transverse type with perpendicular fields in the sections, 1/2 L = 3 meters, E_0 = 42.3 kv/cm, the sections are positioned close to one another. The longitudinal separator provides a larger separation width of particles (antiprotons, K-particles, π-mesons) relative to the transverse model with the same overall apparatus length and klystron. The completeness of separation in both cases is of the

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first order and is sufficiently high. Disadvantages of the longitudinal separator are that it is impossible to have an exit magnet and that it is critically sensitive to the initial scattering of pulses which lead to a larger loss of separation width than in the case of the transverse type. The focusing of the separator beam in the longitudinal model is simpler than in the transverse separator and the longitudinal type also permits better removal of background μ-mesons from the decomposition of π-mesons. In the transverse type separator it is possible to obtain conical resolution of the beams with the perpendicular fields in the two sections. This permits complete separation of beams containing three or more types of particles. Orig. art. has: 7 figures, 44 formulas, 3 tables.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 004/ OTH REF: 001

Card 2/2

SOV/109-4-[illegible]/27

AUTHOR: Glazkov, A.I.

TITLE: Representation of a Multi-dimensional Normal Probability Density in the Form of a Multiple Series (Predstavleniye mnogomernoy normal'noy plotnosti veroyatnostey v vide kratnogo ryada)

PERIODICAL: Radiotekhnika i elektronika, [illegible], Vol 4, Nr 6, p 1058 (USSR)

ABSTRACT: The solution of some radio-engineering [illegible] problems requires the knowledge of N-dimensional [illegible] integrals whose [illegible] [illegible] the form of a multi-dimensional probability density. The difficulties encountered in the evaluation of such integrals are due to the impossibility of separating the integration variables. However, if the probability density is represented in the form of a series whose terms are powers of the correlation function, the problem is soluble. The paper gives a formula for expressing the N-dimensional probability density $f(x_1, \dots x_n)$ in terms of this

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Representation of a Multi-dimensional Normal Probability Density in the Form of a Multiple Series

... of series (see the formulae on p 1055).

There is 1 Soviet reference.

SUBMITTED: June 23, 1958

Card 2/2

GLAZKOV, A. N.

Glazkov, A. N. "On the problem of electric supply for exploration of marine drillings," Azerbaydzh. neft. khoz-vo, 1948, No. 11, p. 8-9

SO: U-3264, 10 April 53, (Letopis 'Zhurnal 'nykh Statey, No. 4, 1949).

GLAZKOV, [illegible]

Electric Power Distribution; Petroleum Industry and [illegible]

Problems in planning and construction of electric power supply to the petroleum industry, Energ. biul., no. 1, 1952.

SO: Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

[illegible]LA[illegible], [illegible]

Electric motors: Petroleum industry

Explosion-proof electric motors for the petroleum industry. [illegible] Biul. No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, June, 1952.
UNCLASSIFIED.

1. [illegible], A.N.

2. USSR (6 C)

4. Electric Power Distribution

7. Planning the electric power supply for petroleum refineries, [illegible] no. 5, [illegible].

9. Monthly List of Russian Accessions. Library of Congress [illegible]

MOVSESOV, N.S.; GLAZKOV, A.N.

"Petroleum industry electrician." Reviewed by N.S. Movsesov, A. N. Glazkov. Energ.biul. no.6:25-28 Je '53. (MLRA 6:6)
(Riznik, A.IA.) (Petroelum engineering)

B. T. R.
Vol. 3 No. 4
Apr. 1954
Electrical Engineering

2 Fuel

4780* **Design and Construction of Electric Supply for Petroleum Industry.** (Russian.) A. N. Glazkov and N. M. Movsesov. *Energeticheskii Biulleten*. 1953, no. 9, Sept., p. 28-31.

Discusses high voltage distribution within a restricted area effecting economies of installation. Tables.

6-4-54

GLAZKOV, A.N.

Industrial methods in making electrical equipment. Energ.biul. no.1:15-17 Ja '56. (MLRA 9:5)
(Electric apparatus and appliances)

MOVSESOV, N.S.; GLAZKOV, A.N.

On the new principle of switching and protection in networks of 3--6--10 kv in oil fields and refineries; concerning S.S.Iosifov's article. Energ.biul. no.1:11-17 Ja '57. (MIRA 10:1)
(Electric switchgear) (Petroleum industry--Electric equipment)

G. ... , A. N.

MOVSESOV, N.S.; GLAZKOV, A.N.

Some problems of electric power supply for peripheral flooding pump stations. Energ.biul. no.7:1-7 Jl '57 (MLRA 10:7)
(Oil field flooding)

GLAZKOV, A.N.

MOVSESOV, N.S.; GLAZKOV, A.N.

Development of electric installation work in the petroleum industry. Energ.biul. no.11:8-17 N '57. (MIRA 10:10)
(Petroleum industry) (Electric engineering)

ARKHANGEL'SKIY, Nikolay Konstantinovich, inzh.; GLAZKOV, Aleksandr Nikolayevich, inzh.; IVANKOV, Pavel Aleksandrovich, inzh.; MIKHAYLOV, Vram Vagramovich, kand. tekhn. nauk; MOVSESOV, Nerses Savadovich, inzh.; MOYSOKHEYN, Boris Iosifovich, inzh.; VRONSKIY, L.N., vedushchiy red.; POLOSINA, A.S., tekhn.red.

[Handbook on oil field electric equipment] Spravochnik po neftepromyslovoi elektrotekhnike. By N.K.Arkhangel'skii i dr. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi litry, 1961. 472 p. (MIRA 14:12)

(Oil fields--Electric equipment)

GLAZKOV, Aleksandr Nikolayevich, inzh.; PARFENOV, Afanasiy Nikolayevich, kand. tekhn. nauk; Prinimal uchastiye ANISIMOV, Sh.Ye., inzh.; VRONSKIY, L.N., ved. red.; VORONOVA, V.V., tekhn. red.

[Electric equipment for petroleum and gas refineries]Elektrooborudovanie neftegazopererabatyvaiushchikh zavodov. Moskva, Gostoptekhizdat, 1962. 343 p. (MIRA 16:1)

(Petroleum refineries--Electric equipment)

(Automatic control)

CHERLASOV, Vladimir Nikolayevich; [illegible], [illegible] [illegible]evich;
[illegible], [illegible], [illegible].

[Fire prevention in electrical systems] Pozharnaia [illegible] elek-
triki [illegible]. Moskva, Izd-vo M-va kommun.kh. [illegible].
[illegible]
[illegible], [illegible]. [illegible].

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010018-6"

GLAZKOV, Aleksandr Nikolayevich; ZHIVOV, M.S., nauchn. red.

[Installation of power distribution networks, lighting networks, and electrical equipment] Montazh silovykh i osvetitel'nykh setei i elektricheskogo oborudovaniia. Moskva, Stroiizdat, 1965. 184 p. (MIRA 18:8)

GULYAYEV, K.N.; LAPTEV, A.D.; MALAMID, M.M.; MELKISHEVA, M.G.; NADEZHDIN, Ye.D.; GLAZKOV, A.P., otv.red.

[Industry of Vologda Province; on the fortieth anniversary of the Great October Socialist Revolution] Promyshlennost' Vologodskoi oblasti; k 40-letiiu Velikoi Oktiabr'skoi sotsialisticheskoi revoliustii. Vologda, Obl.knizhnaia red., 1957. 92 p. (MIRA 13:3)

(Vologda Province--Economic conditions)

PETROV, A.I., inzhener; GLAZKOV, A.V., inzhener.

Increasing the productivity of electromechanical grinding. Vest.mash. 33 no. 10:75-79 O '53. (MLRA 6:10)
(Grinding and polishing)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010018-6"

PHASE I BOOK EXPLOITATION SOV/3285

Akademiya nauk SSSR. Institut metallurgii

Teplovyye protsessy pri kontaktnoy svarke; sbornik trudov laboratorii svarki metallov (Thermal Processes in Resistance Welding; Collection of Transactions of the Laboratory for the Welding of Metals) Moscow, Izd-vo AN SSSR, 1959. 277 p. Errata slip inserted. 3,000 copies printed.

Ed.: N. N. Rykalin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: G. M. Makovskiy; Tech. Ed.: G. A. Astaf'yeva.

PURPOSE: This book may be of interest to engineers and researchers interested in improving the methods and machines used for resistance welding.

COVERAGE: The material is based on work conducted at the welding laboratory of the Institute of Metallurgy, Academy of Sciences, USSR, for the purpose of investigating thermal processes in resistance welding. A number of the papers present some results of theoretical and practical investigation of the butt welding of rods and the welding of crossed rods by the electric resistance method. Spot welding of sheet metal is also mentioned. Measuring and recording procedures are explained and illustrated. The majority of experiments deal with heating, heat distribution, and the flow of current in the welded part. It is

Card 1/6

stated that the automation of industrial processes requires improved, specialized, and automated resistance welding processes. No personalities are mentioned. There are references, both Soviet and non-Soviet, at the end of each paper.

TABLE OF CONTENTS:

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010018-6"

AVAILABLE: Library of Congress

VK/fal
5-8-60

[illegible]

[illegible] of nonlinear resistances for increasing the [illegible] of [illegible] machines. Elektrichestvo [illegible]

[illegible]

L 37422-66 EWT(d)/EWT(m)/EWP(e)/EWT(p)/EWP(k)/EWP(v) ... IJP(c)
ACC NR: AP6012169 SOURCE CODE: UR/0413/66/000/007/0099/0099
BJ/JD

INVENTOR: Glaskov, A. V.; Semenov, Ye. S.; Dolgushin, P. G.; Kulembov, B. S.; Rumyantsev, Yu. S.; Shcherbak, M. V.

ORG: none

TITLE: Device for electrochemical treatment of parts. Class 49, No. 180471

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 7, 1966, 99

TOPIC TAGS: electrochemical treatment, ~~part treatment~~ ELECTROCHEMISTRY, ELECTROLYTE, PHYSICAL CHEMISTRY INSTRUMENT

ABSTRACT: An Author Certificate has been issued describing a device for the electrochemical treatment of parts in a closed working chamber with the electrolyte pumped through and with a hydraulic-drive feed for the electrode tool having a followup system actuated by changes in electrolyte pressure at both the intake and outlet of the chamber. To increase the sensitivity and reliability of the followup system, the control unit is a single-coordinate hydraulic tracking slide with a variable diaphragm affected by the electrolyte pressure in the working chamber. (see Fig. 1) [LK]

Card 1/2 UDC: 621.9.047.7

L 33482-66

ACC NR: AP6012169

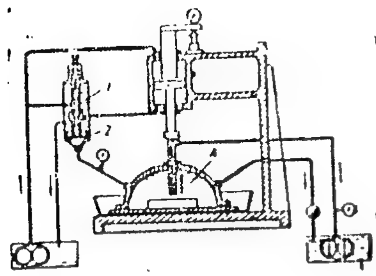

Fig. 1. Device for electrochemical treatment of parts. 1— slide; 2— diaphragm; A— working chamber

Orig. art. has: 1 figure.

SUB CODE: 13,07/ SUBM DATE: 16Mar64

Electrolytic machining

Card 2/2 JS

ANTSUTA, Ye.B., arkhit.; KIRILLOV, N.P., arkhit.; KUZNETSOV, V.V., arkhit.; SLOTINTSEVA, M.N., arkhit.; PYATIN, S.G., inzh. Prinimali uchastiye: CHUYENKO , R.G., arkhit.; MOSEVICH, Ya.Ya., arkhit.; GLAZKOV, P.I., st. tekhnik; GOLUKHOV, G.I., inzh.; SAMSONOVA, T.T., inzh.; KOLESOVA, Ye.Ye., st. tekhnik; MAKAROVA, T.N., tekhnik; SHAMBAT, M.S., inzh.; SEMENOVA, G.V., inzh.; PLATUNIN, Yu.S., gr. inzh. ; VOL'NOVA, T.F., tekhnik; SOLOV'YEV, M.I., inzh.; MOREV, I.A., tekhnik.

[Two-apartment house with two-room apartments; standard plan 1-102-5] Dvukhkvartirnyi zhiloi dom, kvartiry v dve komnaty; tipovoi proekt 1-102-5. Moskva. Al'bom 1. 1960. 27 p. (MIRA 14:10)

1. Moscow. TSentral'nyy institut tipovykh proyektov.
(Apartment houses--Designs and plans)

RESHETOV, K.A., inzhener-kapitan; ZHUKOV, Ya.S., inzhener-mayor; ~~GLAZKOV, G.P.~~, inzhener-kapitan; ZERNOV, A.G., inzhener; SHTEYMAN, A.B., podpolkovnik, redaktor; YEREMEYEVA, Ye.N., tekhnicheskiy redaktor.

[The PK-30, R-20-M and R-60-M medium field telephone switchboards] Polevye telefonnye kommutatory srednei emkosti PK-30, R-20-M, P-60-M. Moskva, Voen. izd-vo Ministerstva Vooruzhennykh Sil SSSR, 1946. 142 p. (MIRA 8:2)

1. Russia (1923- U.S.S.R.) Armiya. Upravleniye boyevoy podgotovki voysk svyazi sukhoputnykh voysk.
(Telephone switchboards)

L 58474-65

ACCESSION NR: AP5014816

The automatic control system does not exclude the use of a semiautomatic push-button control mechanism. Thus,

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010018-6"

trol stick.

It is very easy to control an aircraft by the use of an autopilot with the automatic altitude-control trimmer turned on. However, during a sudden change in flight direction the automatic trimmer may cause an overload. This is also possible in the case of an autopilot malfunction.

To eliminate these safety hazards, the automatic trimmer-control is provided with a device for turning off the system for the duration of evolutions which give rise to angular velocities with respect to lateral axis in excess of 0.4°/sec, which corresponds roughly to an overload of 0.1.

The angular velocity transducer, a sensor element, cuts off the system. It generates and converts an electric signal proportional to angular velocity.

Card 2/3

L 58474-65
ACCESSION NR: AP5014816

The critical trimmer-deflection sensor cuts off the trimmer control as soon as deflection angles of 7° upward and 4° downward are attained.

The automatic trimmer-control system enables a pilot using manual controls to carry out longitudinal balancing by means of the "trimmer" button. This system ensures automatic and semiautomatic aircraft balancing under any operating conditions and does not disturb either the stability of an

autopilot turned on. Orig. art. has 2 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: AC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4008-F

Card 3/3

L 9742-66 EWT(d) BC

ACC NR: AP6000257 SOURCE CODE: UR/0209/65/000/011/0056/0060

AUTHOR: Glazkov, I. (Colonel, Military pilot first class); Galkin, N. (Lieutenant colonel, Military pilot second class); Krylov, V. (Colonel, Military navigator first class)

ORG: None

TITLE: An automatic control system

SOURCE: Aviatsiya i kosmonavtika, no. 11, 1965, 56-60

TOPIC TAGS: aircraft control system, automatic control system, airborne computer, navigation computer, aircraft autopilot, automatic navigator, navigation equipment

ABSTRACT: Aircraft guidance control systems not only carry out the functions of automatic control but also issue instructions to the pilot according to which he may perform flight maneuvers according to a prescribed trajectory. The authors describe a "Privod" piloting-navigation system. In addition to an automatic control system, the Privod is coupled with a computer, the radiotechnical equipment of an SP-50 landing system, an RSBN-2 short-range navigation and landing system, and an automatic pilot. It is intended for affecting the landing approach maneuver,

Card 1/2

L 9742-66

ACC NR: AP6000257

using course and glide equipment; and for plotting the pre-landing maneuver and flight on a prescribed course, trajectory, and altitude. The various components of the system, its function, and landbased aids such as beacons, are discussed. The authors noted that the Privod system presents no difficulty for the crew in flight, and that the experiences of the authors may prove to be beneficial in this respect. The experiences of the authors are to be related in another article. Orig. art. has: 3 figures.

SUB CODE: 17,01,09/ SUBM DATE: None

Card 2/2

[illegible]

L 14566-66 EWT(d) IJP(c) BC

ACC NR: AP6003294 SOURCE CODE: UR/0209/66/000/001/0070/0075

AUTHOR: Glazkov, I. (Colonel; Military pilot first class); Loktionov, V. (Engineer; Major) 47

ORG: none

TITLE: "Autopilot-drive" landing system

1,44,55

SOURCE: Aviatsiya kosmonavtika, no. 1, 1966, 70-75

TOPIC TAGS: autopilot, aircraft landing system, automatic control system, automatic control equipment, motion mechanics

ABSTRACT: An automatic control mechanism, designed to maintain an aircraft on a certain course or to cause it to maneuver, is said to be extremely dependable. However, no matter how reliable an autopilot-drive system may be it is still subject to either partial or total failure. A malfunction of the system may result in a change of the motion parameters of the aircraft, such as the altitude, acceleration, angle of attack, and angle of roll. Experiments were carried out to determine the dynamics of these changes as well as the resources available to the pilot to operate the aircraft. Failures were introduced by feeding into the system an electric signal which was turned on by a crew member at a specially designed "failure control panel." The time needed by the pilot to detect unpredictable errors during flight and to correct for them amounted to 1.5—2.5 sec for errors occurring in the longitudinal and 1.5—6 sec

L 14566-66

ACC NR: AP6003294

for errors originating in the latitudinal control channels of the autopilot. With the autopilot turned off, the pilot operated the aircraft using instrument readings from the drive system, and when the drive system failed he maneuvered by using the gyro horizon, variometer, altimeter, speed indicator, and other instruments. In a perturbed longitudinal motion, the dive failure (pilot's reaction time, 1.5—2.5 sec) caused the aircraft to lose altitude up to 25 m in horizontal flight and 30 m in gliding descent. In 4—6 seconds, the altitude loss amounted to 70 m, while in the zone between the outer and the inner marker beacons it increased to 90 m. The motion of an aircraft during its recovery by a command instrument within 1, 2, 3, 4, and 5 seconds is illustrated in Figs. 1 and 2. The dotted line indicates the path of an

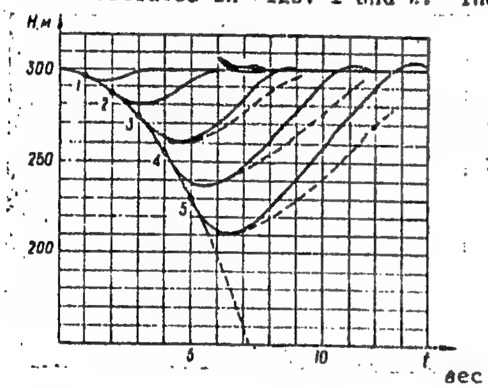

Fig. 1. Altitude loss during recovery in horizontal flight

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L 14566-66

ACC NR: AP6003294

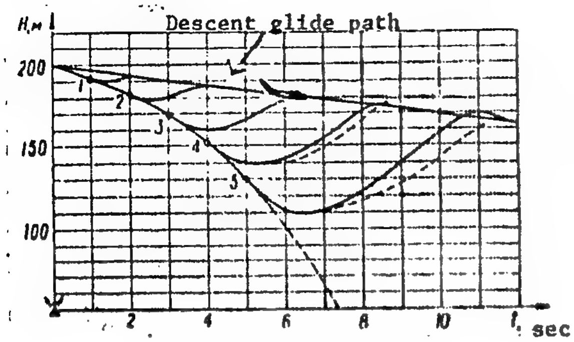

Fig. 2. Altitude loss during recovery in glide path

aircraft piloted by gyro horizon, variometer, glide path indicator, and command instrument while being pulled out of a dive. [VM]

SUB CODE: 01/ SUBM DATE: none/ ATD PRESS: 4190

Card 3/3

L 15404-66 EWT(d) IJP(c) BC

ACC NR: AP6000628 SOURCE CODE: UR/0209/65/000/012/0053/0056

AUTHOR: Glazkov, I. (Colonel, military pilot first class); Galkin, N. (Lt. Colonel, military pilot second class); Krylov, V. (Colonel, military navigator first class) 43 B

ORG: None

TITLE: The landing approach according to the "Privod" system

SOURCE: Aviatsiya i kosmonavtika, no. 12, 1965, 53-56

TOPIC TAGS: aircraft guidance equipment, command guidance system, aircraft guidance

ABSTRACT: The authors describe the actions of the crew and the piloting technique using the "Privod" command guidance system, both in the landing approach situation and during a flight with a prescribed itinerary (cross-country flight). The authors analyze in some detail landing approach techniques from a square configuration called a "box" as well as the techniques associated with a straight approach run pattern. Wind velocity drift angle corrections and banking angles are analyzed as they pertain to landings based on this system. Three to five training flights are sufficient to enable a good crew to land an aircraft with

Card 1/2

L 15404-66

ACC NR: AP6000628

8

this system. Particular attention is given to the safety features of this guidance pilot-assist system. Orig. art. has: 1 figure.

SUB CODE: 17 / SUBM DATE: none

Card 2/2

GOL'DENSHTEYN, I.; ORLOV, K.; GLAZKOV, M.

Special docks in a continuous operation line. Grazhd.av. 17 no.6:6 Je '60. (MIRA 13:7)
(Airplanes--Maintenance and repair)

GLAZKOV, M.

New refrigeration plant on the banks of the river in Moscow.
Rech. transp. 19 no.4:54 Ap '60. - (MIRA 14:3)
(Moscow--Refrigeration and refrigerating machinery)

NIGOF, B.A.; SHENFEL'D, S.D., redaktor; GLAZKOV, M.M., redaktor; KRASNAYA, A.K., tekhnicheskiy redaktor

[Business accounting for a river boat] Khoziaistvennyi raschet rechnogo sudna. Moskva, Izd-vo Ministerstva rechnogo flota SSSR, 1952. 82 p. (MLRA 9:1)
(Inland water transportation--Accounts, bookkeeping, etc.)

GLAZKOV, M.M.; NIGOF, B.A.; SHARAPOV, N.I., redaktor; FEDIAYEVA, N.A. redaktor; POPOV, N.D., tekhnicheskiy redaktor

[Raising labor productivity in the transportation fleet] K voprosu povysheniia proizvoditel'nosti truda na transportnom flote. Moskva, Vodtransizdat, 1953. 58 p. (MLRA 7:8)
(Inland water transportation)

AKHMATOV, P.A., inzhener; GLAZKOV, M.M., inzhener

The introduction of a coordinated technology in industry and transportation as a potential in the development of river transportation. Rech. transp. 14 no.6:6-9 Je '55. (MLRA 8:9)
(Inland water transportation) (Freight and freightage)

AKHMATOV, P.A., inzhener; GLAZKOV, M.M.

Ways to improve research and planning in the economics and operation of river transportation. Rech. transp. 14 no.11:4-9 N '55.
(MLRA 9:2)

(Inland water transportation) (Freight and freightage)

BODROV, Aleksey Dmitriyevich; GLAZKOV, Mikhail Mikhaylovich; KRAYEV, I.S., retsenzent; TUBEROZOV, M.T., retsenzent; KHEYFETS, M.B., red.; MAKRUSHINA, A.N., red.izd-va; BEGICHEVA, M.N., tekhn.red.

[Handbook for the skipper of a barge hauling dry freight] Posobie shkiperu sukhogruznoi barzhi. Moskva, Izd-vo "Rechnoi transport," 1955. 224 p. (MIRA 12:9)

(Barges)

GLAZKOV, M.M.; GORINOV, A.V.

Improve cooperation with efficiency workers and inventors.
Rech. transp. 15 no.10:7-9 O '56. (MLRA 10:2)

(Inland water transportation)

SUTYRIN, Mikhail Andreyevich; GLAZKOV, M.M., red.; KHARYUKOV, N.A., retsenzent; ALEKSEYEV, V.I., red. izd-va; GORCHAKOV, G.N., tekhn. red.

[Safety in pushing barges with towboats] Bezopasnoe vozhdenie sudov sposobom tolkaniia. Moskva, Izd-vo "Rechnoi transport," 1958. 40 p. (Tugboats) (MIRA 11:8)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010018-6"

MAKOVSKIY, B.A., GLAZKOV, M.M.; SOLOV'YEV, I.V., red.; VINOGRADOVA, N.M., red. izd-va,; YERMAKOVA, T.T., tekhn. red.

[Volga River basin and its water transportation] Volzhskii bassein i ego rechnoi transport. Moskva, Izd-vo "Rechnoi transport," 1958. 130 p. (MIRA 11:11)
(Volga Valley--Inland water transportation)

GLAZKOV, Mikhail Mikhaylovich; GROMOV, L.V., red.; VINOGRADOVA, N.M., red.izd-va; YERMAKOVA, T.T., tekhn.red.

[The Yenisey, the great Siberian river] Enisei - velikaia sibirskaia reka. Moskva, Izd-vo "Rechnoi transport," 1959. 216 p. (MIRA 12:2)

(Yenisey Valley--Description and travel)

GLAZKOV, M.M., inzh.-tekhnolog

Hydraulic fill method used for unloading river sand. Rech.transp. 18 no.2:43-44 F '59. (MIRA 12:4)

1. Zapadnyy port Moskovskogo parokhodstva.
(Hydraulic engineering) (Sand--Transportation)
(Loading and unloading)

KOSUL'NIKOV, K.N.; GLAZKOV, M.M.

West Moscow port heading towards complete mechanization and automation. Rech. trans. 18 no.8:14-17 Ag '59. (MIRA 12:12)

1. Nachal'nik Moskovskogo Zapadnogo porta (for Kosul'nikov). 2. Starshiy inzhener-tekhnolog Moskovskogo Zapadnogo porta (for Glazkov).
(Moscow--Docks)
(Sand--Transportation)

S/064/60/000/006/005/020
A104/A029

AUTHORS: Gol'denshteyn, I., Orlov, K., Glazkov, M. M.

TITLE: Production Line Docks

PERIODICAL: Grazhdanskaya Aviatsiya, 1960, No. 6, p. 6.

TEXT: The authors describe a mobile repair dock for ИЛ-14 (Il-14) aircraft designed by the plant collective under the supervision of I. Ivasik. The dock is made of welded channel-steel and resembles a trolley-frame on rails along which the aircraft is moved as shown in the figure. The aircraft is suspended inside the dock and repairs are carried out from a number of bridging boards. The dock has two fitter's benches, compressed air is supplied from the main line and a 24 v electric power supply is maintained. Upon a number of tests and modifications the production of these docks has been entrusted to the establishment supervised by A. Ovsyanikov. The photograph shows the fitter V. Makhov of the repair workshop supervised by Kh. Izmiryan working on the landing gear of a Tu-104 aircraft. There is 1 photograph and 1 figure.

Card 1/1

GLAZKOV, Mikhail Mikhaylovich; YELISTRATOV, S.I., retsenzent; SIDOROV, P.P., red.; LOBANOV, Ye.M., red. izd-va; RIDNAYA, I.V., tekhn. red.

[Business accounting in a harbor section; from the work practice of the Moscow Western Harbor] Khozraschet uchastka porta; iz opyta raboty Moskovskogo Zapadnogo porta. Moskva, Izd-vo "Rechnoi transport," 1963. 37 p. (MIRA 16:10)

(Moscow--Port districts--Finance)
(Loading and unloading)

GLAZKOV, M., inzh.-ekonomist

Year-round work for river harbors. Rech. transp. 22 no.8:15-16 Ag '63. (MIRA 16:10)

(Harbors--Equipment and supplies)

GLAZKOV, N.N.; ZELENIN, A.P.

Limiter for radio relay communication lines. Izv.vys.ucheb.zav.; radiotekh. 8 no.5:617-619 S-O '65.

(MIRA 18:12)

1. Submitted March 11, 1965.

[illegible]

[illegible] for an AI-100 amplitude analyzer. Prib. i tekh. eksp. 10 [illegible]-222 Ja-F '65. (MIRA [illegible])

GLAZKOV, N.P.

Electrostatic amplitude analyzers. Prib. i tekh. eksp. no.1: 48-50 Jl-Ag '56. (MLRA 10:2)

(Pulse techniques (Electronics))
(Electronic instruments)

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1231
AUTHOR POZE, CH.P., GLAZKOV, N.P.
TITLE The Inelastic Scattering of Photoneutrons with an Energy of 0,3; 0,77; and 1,0 MeV.
PERIODICAL Žurn. eksp. i teor. fis, 30, 1017-1024 (1956)
Publ. 6 / 1956 reviewed 9 / 1956

The cross section of this inelastic scattering was measured on the nuclei of the following elements: U, Bi, Hg, W, Sb, Sn, Cd, Cu, Ni, Fe, Al, Na. Method and technique of measuring: The inelastic effect was measured by measuring the primary spectrum of the neutrons in the investigated substances. The samples were spherical and had a central cavity for the reception of neutron sources (Na-Be, La-Be and Na-D_2O) The neutrons were recorded by measuring the recoil nuclei with a spherical ionization chamber. Tests consisted in measuring the primary spectrum of the source without scatterer and of the secondary spectrum of the source enclosed in the center of the scatterer. Next, structure and manner of acting of the spherical ionization chamber as well as the characteristics of the photoneutron sources are discussed. It is particularly easy to construct a spherical chamber of glass which is coated with silver inside and covered with electrolyte copper on the outside. Measuring results and the computation of σ_H: If the number of neutrons diminishes exponentially with the primary energy E_0 as a result of inelastic acts of scattering, it applies

for the scattering cross section in hydrogen that $\sigma_H = (1/\alpha l) \ln(N_1/N_2)$ Here N_1 and N_2 denote the numbers of momenta in the primary and secondary spectrum respectively at the E_0, l - the scattering length of the neutrons (computed in diffusion approximation). The errors due to this diffusion approximation and to the assumption of an exponential reduction of the primary spectrum are slight. Wherever possible, either the energies of the individual excited levels or the average energy of the inelastically scattered neutrons were determined from the recoil spectra, which, however, was possible only approximatively (with an accuracy of from 5 to 7%). It is particularly difficult to determine the left edge of the spectrum of inelastically scattered neutrons. As an example the measuring results for Pb and Bi are mentioned. At 0,3; 0,77; and 0,9 MeV the recoil spectra of Pb and Bi are completely equal within the limits of measuring errors. Therefore, the absorption and the inelastic scattering of neutrons with less than 0,9 MeV probably amounts to not more than 0,1 barn. However, within the range of more than 0,9 MeV (here at 1 MeV) an inelastic scattering becomes noticeable and the spectrum of Pb decreases within the entire range from E_0= 1 MeV to E=0,45 MeV. From the curves there follows immediately N_1/N_2, and σ_H = 0,2 ± 0,1 barn is found. In conclusion the measuring results for tungsten are discussed; N_1/N_2 = 1,25 and σ_H = 0,4 ± 0,2 barn was found.

INSTITUTION:

Glazkov, N.P

120-4-28/35

AUTHOR: Glazkov, N.P.

TITLE: An He^3-camera for Neutron Spectroscopy (He^3-kamera dlya spektrometrirovaniya neytronov)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, no.4, p.95 (USSR)

ABSTRACT: The construction of an He^3-counter which registers neutrons from the reaction $He^3(n, p) T$ + 770 keV with very good energy resolution (3%) in the region 0.1 - 1 MeV was described by Batchelor et al. (Ref.1). However, the construction of the counter is not simple enough for it to be easily carried out in laboratory conditions. A simpler construction is now described. It was used earlier with a different filling by Poze et al. (Ref.2). The camera has a spherical form and its resolution compares well with the resolution of the cylindrical He^3-counter. The following data are given: diameter = 200 and 15 mm, capacitance of collecting electrode = 5 μμF, filling in mm of Hg = 350 (He^3) + 1 900 (Ar) + 90 (N_2), gas multiplication = 1, positive ion effect = 3%, energy range .. 0.1 - 1 MeV, wall effect 10-30%, energy resolution for E_H = 0 is = ± 4% ± 30 keV, efficiency = 10^{-4}.

Card1/2

An He^3-camera for Neutron Spectroscopy. 120-4-28/35

There are 1 figure and 1 table and [illegible] references, 1 of which is Slavic.

SUBMITTED: March 1[illegible], 1957

AVAILABLE: Library of Congress

Card 2/2

107/1[illegible]-5[illegible]-5-25/32

AUTHOR: Glazkov, [illegible]. P.

TITLE: Multi-Channel Pulse Analyzer (Mnogokanal'nyy analizator impul'sov)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 5, pp 97-98 (USSR)

ABSTRACT: The device is based on three tubes (see the circuit diagram of Fig.1). The input pulse is used to charge a storage condenser C_1 through a diode; simultaneously the pulse also charges capacitance C_2 to the same voltage through a cathode follower. The storage condenser is periodically shorted to earth, every .02 sec, by means of a motor-driven switch. Consequently, capacitance C_2 is independently discharged by a constant current from the phantastron (see Fig.1) so that the discharging time is proportional to the amplitude of the input pulse. At the same time rectangular pulses are produced at the screen grid of the phantastron whose duration is proportional to the amplitude of the input pulses. The rectangular pulses are applied to the cathode of a thyratron (the fourth tube) and ignite it with their front edges. Depending on the position of [illegible] switch, the thyratron discharges the capacitance of a corresponding

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[illegible] Analyser

counter. The capacitance is then charged by the current [illegible] through the counter so that the counter is triggered. Similarly, the remaining counters of the analyser will be triggered independently of one another. In this way, the [illegible] can be counted in a number of independent channels. A [illegible] of the device (the counters, the electronic circuits and the power-driven switch) is given in Fig.1. The author thanks A. I. Tribisov and S. Y. Lebedev for valuable advice. The paper contains [illegible] figures and 5 references; [illegible] of the references is English and [illegible] are Soviet.

[illegible]D: [illegible]

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E032/E514

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AUTHOR: Glazkov, N.P.

TITLE: A Cylindrical Chamber for Fast Neutron Spectrometry/9

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No 3, pp 16-19

ABSTRACT: Neutron spectrometry in the energy region 0.1-1 MeV no longer presents any serious difficulties if use is made of ionisation chambers filled with He^3 gas in which the neutrons are detected with the aid of the reaction He^3(np)T. The energy resolution which can be reached in this way is about 7% (Glazkov, Ref 2). However, the use of He^3 above 1 MeV is difficult owing to He^3 recoil nuclei whose maximum energy is greater than Q = 0.77 MeV. It follows that in this energy region neutron spectrometry can only be successfully carried out by using hydrogen, deuterium, or helium recoil nuclei. However, the resolution which can be achieved in this way is rather low. Attempts have therefore been made to design a neutron spectrometer which would have a wide energy range, a high energy

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A Cylindrical Chamber for Fast N... ...ectrometry

resolution, and a high detection efficiency. A partly successful solution of this problem has been described by Perlow in Ref 3. However, the disadvantage of Perlow's instrument is its low recording efficiency and its difficult construction. The present paper describes another and simpler, non-mechanical method of collimating recoil protons which makes use of the entire volume of gas in the chamber so that the effective thickness of the gas can be taken as several times greater than the range, and hence the efficiency can be increased by an order of magnitude. The principle of the instrument is as follows. The incident neutrons enter a cylindrical hydrogen chamber along its axis. Only those proton tracks which are parallel, or almost parallel, to the axis of the chamber are selected. In the analysis of tracks use is made of the considerable difference in the pulse shape for different track directions. In a cylindrical chamber in which the field is largely

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A Cylindrical Chamber for Fast Neutron Spectrometry

concentrated near the inner electrode; this difference is very considerable and can easily be used. It is shown that tracks lying within an angular range of less than 10° can be selected and the energy of the protons then differs by only 3% from the incident neutrons. The pulse analyser which was used to select the pulses lying within the 10° cone is shown in Fig 2. Fig 3 shows collimated and uncollimated proton spectra for neutrons of 470, 785 and 1100 keV Fig 4 shows the neutron spectrum for a polonium beryllium source. The curve marked a was obtained with the collimating device. In the final form, the chamber was 25 cm long, 10 cm in diameter and the central wire had a diameter of 0.02 cm The chamber was filled with a mixture of hydrogen (3 atm) and argon (7 atm) The efficiency was 6×10^{-8} at $E_n = 0.2$ MeV. The resolution at 1 MeV was 10%

Acknowledgment is made to A. I. Leipunskiy and S.I.Chubarov for interest in the present work.

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A Cylindrical Chamber for Fast N...

S/120/62/000/005/034/036
E194/E535

AUTHORS: Glazkov, N.P. and Lyubchenko, V.F.

TITLE: Equipment for filling chambers with He^3

PERIODICAL: Pribory i tekhnika eksperimenta, no.5, 1962, 192-193

TEXT: A simple mercury pump has been designed so that apparatus such as ionization chambers can be filled with He^3 at a pressure of 50 atm. Mercury is transferred from one cylinder to another either by gravity assisted with a vacuum pump or by applying industrial argon at a pressure of 100 atm. In this way He^3 is first transferred from a storage vessel to the upper cylinder and then from thence to the apparatus to be filled. The cycle is repeated until the necessary pressure has been built up. The entire equipment is made of stainless steel, it is controlled by needle valves in which combined teflon and rubber glands prevent leakage at pressures up to 150 atm. Sight glasses are provided to observe the mercury level. Cold traps may be fitted to purify the He^3. The equipment was tested by filling an ionization chamber with a volume of 30 ml to a pressure of 50 atm He^3 and the gas purity was observed. There is 1 figure.

SUBMITTED: January 8, 1962

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GLAZKOV, N.P.

AID Nr. 979-1 29 May

INELASTIC SCATTERING OF NEUTRONS IN 0.2-1. 2 Mev REGION (USSR)

Glazkov, N. P. Atomnaya energiya, v. 14, no. 4, Apr 1963, 400-402.

S/089/63/014/004/009/019

By means of a spherical chamber 40 mm in diameter filled to 40 atm with He^3, measurements have been made of the spectra and cross sections for the inelastic scattering of 0.2-1. 2-Mev neutrons by the nuclei of V, Th, Hg, W, Sb, Cd, Mo, Nb, and Fe. The scattering specimens had the form of spherical layers 30 mm thick with inside and outside diameters of 40 and 100 mm, respectively, and were made of substances with a natural isotope content. A tritium target bombarded by a proton beam from an ЭГ-2.5 Van de Graph accelerator served as a neutron source. The distance from target to scatter was 350 mm. The energy scattering by the target amounted to 60 Kev. To determine the effect of inelastic scattering, the neutron spectra were measured with and without a scatterer. The spectra obtained for various elements are shown in the illustration. Inelastic scattering cross sections calculated from the spectra are given in a table [AS]

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GLAZKOV, N.P.

Spectra and cross sections of inelastic neutron scattering in the energy range 0.2 to 1.2 Mev. by V, Th, Hg, W, Sb, Cd, Mo, Nb, and Fe nuclei. Atom. energ. 14 no.4:400-402 Ap '63. (MIRA 16:3)
(Neutrons--Scattering) (Neutrons--Spectra)

GLAZKOV, N.P.

Inelastic scattering cross sections of 0.4 - 1.2 Mev. neutrons on medium and light nuclei. Atom. energ. 15 no.5:416-418 N '63.

(MIRA [illegible])

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ACCESSION NR: AP5016379 UR/0120/65/000/003/0053/0056
539.1.074.8

AUTHOR: Glazkov, N. P.

TITLE: Neutron He^3 spectrometer filled at 40 atm

19

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1965, 53-56

TOPIC TAGS: neutron spectrometer, He sup 3 spectrometer

ABSTRACT: The characteristics of a spherical, 40-mm diameter, chamber filled with He^3 at 40 atm are reported. These parasitic effects are allowed for: microphonic, induction, wall (parietal), electrode-adhesion, and recombination. The electron-collection time at 6 kv is 5 μsec. The energy resolution, within the 0.1—1.2-Mev dynamic range, is 100—150 kev, with an average efficiency of 0.25%. The energy spread due to recombination is 50 kev for thermal neutrons and 100 kev for 1-Mev neutrons. The energy spread due to the induction effect is 1%. The wall effect is 10% for 1-Mev neutrons. The high voltage is applied

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between the 40-mm steel sphere and an internal 2-mm diameter sphere held by a lead-in wire mounted in a Mo-glass insulator. Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: none

SUBMITTED: 06Apr64 ENCL: 00 SUB CODE: NP

NO REF SOV: 005 OTHER: 002

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